Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Revision of Part 15 of the Commission's Rules	)	ET Docket No. 13-49
To Permit Unlicensed Information Infrastructure	)	
(U-NII) Devices In The 5 GHz Band	)	

To: The Commission

COMMENTS OF
AMERICAN ASSOCIATION OF STATE
HIGHWAY & TRANSPORTATION OFFICIALS

Date: July 7th, 2016

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The American Association of State Highway Transportation Officials, Inc. ("AASHTO") pursuant to Section 1.415 of the Commission's Rules, 47 C.F.R. §1.415, hereby respectfully submits its comments in response to the recent Public Notice in the above-captioned proceeding.

I. BACKGROUND

A. The American Association of State Highway & Transportation Officials

AASHTO is a non-profit, non-partisan association representing all 50 states, the District of Columbia and Puerto Rico established in 1914. AASHTO is a standards setting organization and continues as an international leader in setting technical standards for all phases of highway system development, including design, construction of highways and bridges, materials, maintenance and many other technical areas. AASHTO serves as a liaison between the state departments of transportation and the federal government in the areas of policy development, standards setting, and technical activities, all of which are the products of volunteer state department of transportation personnel who work through the AASHTO committee structure. AASHTO's committees support all transportation modes and represent the highest standard of transportation expertise in the country, addressing every element of planning, design, construction, and maintenance.

AASHTO is designated by the Federal Communications Commission as the only agency authorized to recommend or approve applications for radio frequencies in the Public Safety Highway Maintenance Pool. This authorization was subsequently extended to include all frequencies assigned to the Public Safety Frequency Pool and the SMR 800 MHz pool being vacated by Sprint-Nextel.

AASHTO is internationally recognized for its pioneering work in providing for the safety of the millions of travelers using highways, trains, ferries, airports and public transit systems daily. AASHTO develops recognized standards for the design and operation of roads, rail systems, ports and waterways, airport facilities and transit systems with the sole intent of protecting the traveling public. In its role of representing state departments of transportation, AASHTO directly supports and integrates with the police, fire and medical services operated by member states for the protection of life, health and property of those using the nation's multiple transportation systems. AASHTO is a founding member of the National Public Safety Telecommunications Council ("NPSTC") and an initial member of the Public Safety Spectrum Trust Corporation ("PSST"), which held the nationwide public safety broadband network license. AASHTO has been selected to serve as a member of the Emergency Response Interoperability Center's Public Safety Advisory Committee ("ERIC PSAC"). AASHTO works with the other Frequency Advisory Committees ("FACs") on the Land Mobile Communications Council ("LMCC") and the Public Safety Communications Council ("PSCC") in setting policy and procedures for coordinating and assigning radio frequencies under Part 90 of the Commission's Rules.

The comments provided herein are submitted on behalf of the AASHTO Special Committee on Wireless Communications Technology and the AASHTO Subcommittee on Transportation Systems Management and Operations. These committees represent AASHTO's State DOT members in matters related to the advancement and deployment of wireless communications and technologies to support Connected Vehicle applications.

B. <u>The Commission's Public Notice</u>

In the Public Notice, the Commission asks to refresh the record in the U-NII proceeding in the 5 GHz band. Specifically, it asks AASHTO, as an interested party, to comment on the status of potential sharing "solutions" between U-NII and Dedicated Short Range Communications ("DSRC") devices. Two such proposals (Detect-and-Avoid "Proposal 1" and Re-channelization "Proposal 2") were examined by an IEEE "Tiger Team" which concluded that the proposals "would require further study and testing to verify that [they] would adequately protect DSRC applications from harmful interference."[1] That this team, the creation of which closely follows AASHTO's suggestions for sharing in its original comments, was unable to make a definitive recommendation on implementation is not surprising; it is exactly why AAHSTO recommended further study. The Commission also proposes a three phase testing plan, and asks comment on those, various aspects of DSRC implementation and possible alternatives to already-considered sharing protocols.

C. Prior Comments

AASHTO filed both Comments[2] and Reply Comments[3] in Docket 13-49, and was one of only two original filers to extensively examine interference scenarios with technical details. None of its technical findings have been subsequently opposed on the record. AASHTO argued that unmitigated sharing would render DSRC useless; proposed interference criteria for several cases of DSRC uses; and concluded that unless a rigorous testing protocol was instituted, sharing was unadvisable.

II. COMMENTS

In light of additional comments received and progress made in this effort, AASHTO here reiterates its position with all information previously submitted and now adds additional

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[1] Tiger Team final report, P7 see https://mentor.ieee.org/802.11/dcn/15/11-15-0347-00-0reg-final-report-of-dsrc-coexistence-tiger-team-clean.pdf
[2] See https://ecfsapi.fcc.gov/file/7022418817.pdf
[3] See https://ecfsapi.fcc.gov/file/7520933407.pdf

information based on the renewed record, the Commission's Public Notice and the evolution of DSRC since 2013:

- A proposed spectrum sharing approach that dedicates only a small portion of the spectrum to Intelligent Transportation Systems (ITS) or that requires the creation of a database of fixed locations in order to create quiet zones around each would be unable to account for the nomadic nature of mobile units and would compromise the majority of the DSRC units that would be placed in service;
- Spectrum segmentation would have the effect of limiting ITS use of Dedicated Short Range Communications (DSRC) to the transmission and reception of only the defined Basic Safety Message (BSM), which is only one component of the planned and defined message sets available. The United States Department of Transportation (DOT) in its Connected Vehicle program (CV) has identified dozens of applications involving Vehicle-to-Vehicle (V2V), Vehicle-to-Infrastructure (V2I) and other potentially DSRC-related communications.[4]
- With few exceptions, there is no "Bright Line" between safety and non-safety messages. As cited above, there are seven categories of message services currently identified: V2I Safety, V2V Safety, Agency Data, Environment, Road Weather, Mobility and Smart Roadside. Though tempting to class Mobility as a non-safety category, Mobility includes Emergency Vehicle Pre-emption, Guidance for Emergency Responders and Emergency Communications and Evacuation, which are clearly safety-related. Moreover, consider Florida's Hurricane Evacuation plan—the two Interstates (I-75 and I-95) leaving the State

[4] See http://www.its.dot.gov/pilots/cv_pilot_apps.htm

to the North have inevitably become parking lots when large wildfires or hurricanes have threatened. In these cases, and in many other states and scenarios, all of Mobility and much of the other messaging becomes critically safety-related. The public benefit of DSRC penetration must not be delayed: its economic benefits are attractive and massive, and in emergencies are critical to life.

- Much work has been accomplished by groups both within the Federal Communications Commission and the State Department involving the use of spectrum near our national borders. The introduction of unlicensed devices into the 5850-5925 MHz spectrum will negate the many efforts towards this international harmonization as the United States would be the only country with an unregulated and unlicensed component allowed in the spectrum reserved for life safety applications being developed in this spectrum.
- There are proposals both to realign DSRC channels, and to include changes to the internationally accepted signaling rates used in vehicle-to-vehicle and vehicle-to-infrastructure communications. AASHTO reiterates its comment that changes to the data rate without full international agreement would further isolate the United States from participating in the international arena as vehicles used here would become unable to utilize this life saving technology when crossing our borders. While it is technically feasible to develop units capable of switching between the possible clocking rates, there is no guarantee these dual rate units would be manufactured or installed in vehicles manufactured or assembled in other countries and used in the United States.

AASHTO also expresses its support for spectrum sharing only in situations and areas where it is technically feasible and will not compromise the safety and economic advances offered by DSRC technologies. Therefore, it requests that any decisions regarding the sharing of the 5 GHz spectrum band happen only after there is technical confirmation, based on thorough field testing, that it will not jeopardize such advances. Rigorous testing should be prioritized over a short schedule.

While the 5.9GHz spectrum supports safety applications that specifically address the avoidance and mitigation of crash events, there are significant potential improvements in congestion, mobility, economic, environmental and public safety that utilize the allocated spectrum. In 2014, congestion caused urban Americans to travel an extra 6.9 billion hours and purchase an extra 3.1 billion gallons of fuel for a congestion cost of $160 billion. Trucks account for $28 billion (17 percent) of that cost, much more than their 7 percent of traffic[5]. Public health concerns include environmental impacts from pollution, but also mobility in terms of natural disasters, such as hurricane evacuations, and emergency response mobility.

Mobility and environmental applications, such as the Speed Harmonization, Queue Warning, Eco-Drive, Freight Traffic Signal Priority, and Emergency Vehicle Preemption utilize the same safety messages (Basic Safety Messages) together with additional messages including Traveler Information Messages (TIM), Roadside Alert (RSA), Signal Request Messages (SRM), Signal Status Messages (SSM), Signal Phase and Timing (SPaT), geographic roadway descriptions (MAP), and others, including a new Basic Infrastructure Message (BIM) that provides critical roadway data to the vehicles.

There is already concern about the capacity of Channel 172 to support basic safety applications. The SAE J2945/1 On-Board Requirements for V2V Safety Communications specification defines a channel communication congestion control algorithm that is required in all implementations to address the communication congestion on channel 172. The other applications that can address

[5] See Texas Transportation Institute, 2015 Urban Mobility Scorecard. http://d2dtl5nnlpfr0r.cloudfront.net/tti.tamu.edu/documents/mobility-scorecard-2015.pdf

traffic congestion, mobility, economic, environmental and public safety concerns utilize the information on Channel 172 as well as the other channels that are available to support vehicle-to-infrastructure (V2I) applications. These channels are critical to the effectiveness of mobility and environmental applications. These applications are fundamental to the future of infrastructure transportation management.

The Public Notice invites information on current and planned deployments of DSRC. The FCC is aware of the extensive deployment in Ann Arbor, Michigan, the site of the US DOT's Safety Pilot. This test bed, established in late 2012, is the world's largest deployment of on-roadway connected vehicle technology. With an investment from the USDOT of over $31 million, work at this test bed has included over 2700 DSRC-equipped vehicles. The University of Michigan is currently planning a significant expansion of this facility.

In addition to the Ann Arbor deployment, a number of other DSRC deployments exist around the United States. After years of planning and research, interest in deployment is expanding rapidly. While not an exhaustive list, the following sites are examples of locations where installations exist or are in the planning stages:

- **Maricopa County, Arizona:**
    - Managers: MCDOT, ADOT, and the University of Arizona
    - Planned since: 2007
    - Operational since: 2012
    - Investment estimate: >$3 Million
    - Description: Through the MCDOT SMART*Drive* Program^{SM}, the Maricopa County Department of Transportation has invested in planning, designing and implementing a connected vehicle test bed in Anthem, AZ a community of about

25,000 residents. The test bed includes 5.5 miles of roadway and 11intersections equipped with roadside DSRC technology. The County has also equipped several of its incident response vehicles with the on-board DSRC radios to demonstrate the V2I applications. The test bed has served as the development site for the USDOT Multimodal Intelligent Traffic Signal System (MMITSS) suite of applications that improves safety for incident responders and pedestrians; enhances mobility for transit; and reduces delay for freight. The applications have been successfully tested at our test bed and demonstrated to various state, national and international stakeholders on numerous occasions.

- **Fairfax, Virginia and Blacksburg, Virginia**
  - Managers: VDOT and Virginia Tech Transportation Institute
  - Planned since: 2012
  - Operational since: 2013
  - Investment estimate: >$900,000
  - Description: During 2012, two test beds were planned, designed and deployed across the state of Virginia. VDOT invested in these test beds initially to support the Connected Vehicle/Infrastructure University Transportation Center (CVI-UTC) and then further developed to establish the Virginia Connected Corridor. VDOT targeted one of the most congested corridors in the United States, located along I-66, I-495, U.S. 29 and U.S. 50, as the focus of the first CV environment in Virginia. A second test bed was established in Southwest at the Virginia Smart Road in Blacksburg, Virginia, a closed test facility, in order to research and test applications prior to deployment in live traffic. The VCC consists of over 47 licensed DSRC

roadside equipment units and utilizes instrumented vehicles, including light passenger vehicles, motorcycles, a motor coach and a semi-truck. VDOT has performed a variety of system level testing and conducted initial CV projects to develop applications that will benefit regional stakeholders, including but not limited to work zones alerting, real time in-vehicle signing, incident scene alerts, and weather and road condition reporting and alerting.

- **Washoe County, Nevada**
  - Managers: FHWA, NCAR, Nevada DOT and University of Nevada Reno (UNR)
  - Planned since: Fall of 2014
  - Operational since: Fall of 2015
  - Investment: >$1,000,000
  - Description: Nevada DOT in collaboration with FHWA, NCAR and UNR, has initiated a connected vehicle project to leverage existing Integrated Mobile Observation (IMO) resources and expertise in the state and to develop a pilot test corridor for connected vehicles that uses multimodal (hybrid) communication methods and establish a sustainable platform that is NTCIP compliant that supports DSRC communications. The pilot corridor consists of 32 miles along I580 between Reno and Carson City equipped with DSRC technology. The pilot corridor also includes 54 miles of cellular coverage along SR 431, SR 28 and US 50 between the SR 431/Mt. Rose highway intersection of I580 and the intersection of US 50 and I 580. The state also equipped ten vehicles with on-board DSRC radios to demonstrate V2I applications. This pilot corridor has served as the test bed for mobile weather data collection to further support the state's maintenance,

operations, and traffic management centers with applications for Maintenance Management Systems (MMS) and Maintenance Decision Support Systems (MDSS). This DSRC application has been successfully tested and demonstrated to various state and national stakeholders on numerous occasions.

- **Palo Alto, CA**
    - Managers: CalTrans and University of California Berkeley / PATH
    - Planned since: 2012
    - Operation Date: September 2015
    - Investment Estimate: $1,500,000
    - Description: CalTrans and the University of California PATH program, with funding from the US DOT and a number of states (through the Pooled Fund Study program) deployed DSRC units at 10 intersections in Palo Alto. This corridor is being used to test and evaluate the Multi-Modal Intelligent Traffic Signal System (MMITSS) software, which balances priorities between transit, emergency vehicles, and freight traffic. This corridor has been used for other DSRC testing, and has had DSRC deployments since 2007.
- **Salt Lake City, Utah:**
    - Managers: Utah DOT and Utah Transit Authority (UTA)
    - Planned since: December 2014
    - Operation Date: June 2016
    - Investment Estimate: $700,000
    - Description: UDOT and UTA have begun deployment of DSRC units along a corridor in the Salt Lake City area. Currently there are three DSRC units installed.

An additional 30 units are planned by the end of 2016. The agencies are running the Multi-Modal Intelligent Traffic Signal System (MMITSS) software to provide signal priority to transit buses, with the goal of improving schedule reliability. Initially, about 10 buses will have DSRC on board, but this number will increase. While this aspect of MMITSS is a mobility application, the intent of this project is to create a backbone of DSRC units on signalized intersections so that other applications, including safety applications, can be implemented in the next two to three years.

- **Pittsburgh, Pennsylvania:**
    - Managers: Pennsylvania DOT and Carnegie Mellon University
    - Planned since: 2014
    - Operation Date: June 2016
    - Investment Estimate: $200,000
    - Description: PennDOT and Carnegie Mellon University have installed DSRC at 35 intersections in the neighborhoods of Pittsburgh, and plan to add 11 more intersections. Currently, the DSRC units are broadcasting Signal Phase and Timing (SPaT) data. This is the first step of a 25-year plan to install DSRC in signals and vehicles throughout the area, and anticipates the expansion of private vehicle implementation beginning with the GM vehicles in fall of 2016.
- **Eastern Idaho:**
    - Managers: Idaho Transportation Department (ITD) and the Idaho National Laboratory (INL), a Department of Energy research facility
    - Planned since: 2014

- Operational since: July 2016
- Investment estimate: Initial investment in DSRC deployment is approximately $25,000. Budget for pending grant application to expand the deployment to 25 RSUs and 100 OBUs is $32 million including matching funds.
- Description: The INL operates a private transit fleet of approximately 100 coaches to provide transportation services for their employees between residential areas and the remote desert research site in eastern Idaho. ITD maintains the bus routes connecting Pocatello, Blackfoot, Idaho Falls, Rigby, Rexburg and Mackay with the remote INL site. The initial pilot deployment of 3 OBUs and one RSU will provide the foundation for the future deployment of additional DSRC devices on the roadside, and on-board the coaches, snowplows, and maintenance vehicles to provide safety, mobility, environmental and operational benefits to ITD and the INL.

- **I-70 Mountain Corridor, Colorado**
  - Manager: Colorado Department of Transportation (CDOT)
  - Planned since: June 2015
  - Planned operation date: DSRC deployment (construction phase) in Fall 2017
  - Investment estimate: $10 million
  - Description: The primary goal of this CV Pilot Program is to maximize safety and mobility on the I-70 mountainous corridor through probe data collection, V2I communication, and decision support analysis to enable real time traffic management and traveler information and safety applications. The project will equip more than 700 CDOT, first responder, ski shuttle, and commercial vehicles

on I-70 with Dedicated Short Range Communication (DSRC) devices to facilitate data collection. The project will install over 24 DSRC devices on the roadside to enable data collection and timely V2I safety alerts. The project will deploy smartphone mobile application technology capable of data collection and delivering the following real-time, hands-free, text-to-voice safety and travel alerts including curve speed warning, queue warning, virtual variable speed limits, spot weather advisory, motorist advisory warnings, advanced traveler information systems, freight travel information systems, smart truck parking, work zone warning, hazard warning (historical), incident advisory, avalanche warning, rock fall warning, sun glare warning, low visibility warning, managed lanes info, travel time, chain law activation, loss of friction, wrong way driver warning, and emergency response vehicle warning.

- **Portland and Mt. Hood, Oregon:**
  - Managers: Oregon Department of Transportation (ODOT) and Portland Bureau of Transportation
  - Planned since: Spring 2016
  - Planned operation date: Q1 2019 (if project is funded)
  - Investment estimate: $8 million
  - Description: ODOT is in the planning phases of DSRC deployment, and recently applied for a DOT grant that would install DSRC systems on several sections of the ODOT system. In ODOT's ATCMTD grant submission, we proposed installing V2I DSRC on Oregon DOT, Daimler, and TriMet fleet vehicles, enabling freight signal priority, transit signal priority, and signal phase and timing data transmission

on Columbia Blvd., OR212, and OR224 in the Portland area. We also proposed enabling DSRC speed feedback on the US26 and OR35 corridors around Mt. Hood.

In addition to these sites, the USDOT has provided funding for three Pilot Deployment Sites. With $42 million in federal funding, and local matching funds, the sites in New York City, Tampa, and I-80 across Wyoming will greatly expand the number of DSRC units deployed and the development of useful applications. The New York site is planning to equip six major corridors in the city and 10,000 city vehicles with V2I infrastructure. The Tampa project will enhance vehicle and pedestrian safety using at least six different applications. The Wyoming project will improve the safety of freight travel through the severe-weather I-80 corridor. Planning and application development for these three sites began in mid-2015, and equipment deployment is expected in 2017.

A. Proposal 1, Detect-and-Avoid

The Tiger Team found this proposal to be the better possibility of the two. In addition, Cisco has placed on the record a technically detailed description of its proposed hardware characteristics.[6] A typical BSM requires approximately 0.0002 seconds, and can be generated at any moment. High Availability/Low Latency (HALL) reception is critical. Until and unless Cisco provides further technical detail as to how such messages, in the presence of longer 802.11 messaging, could be reliably received, AASHTO reiterates its position that rigorous testing is necessary, not only on atypical test beds now available, but in actual urban business centers such as San Francisco, before allowing this approach. It is clear from the evolving implementations of DSRC that messages critical to life and safety will occur on not only Channel 172 but all DSRC

[6] See Cisco Ex Parte filing https://ecfsapi.fcc.gov/file/60001390484.pdf, pp 3-5

channels, and that these must be reliably received at signal levels between -95 and -100 dBm. Urban path losses are such that a U-NII device indoors, in attempting to sense a DSRC signal with as much as 30 dB of path attenuation, could miss detection of an initial approaching mobile message due to the low signal strength imposed on OBU devices by Rule, or by U-NII self-interference (de-sense) during its own or nearby transmissions on co-channel or adjacent spectrum. Thus it could interfere with the mobile DSRC communication as it continued toward the device. Intersection safety is responsible for a large minority of vehicular crashes and the majority of Vehicle-Pedestrian crashes. Therefore any testing protocol must eventually include complex interactions between differing classes of vehicles, involving differing densities of:

- ordinary traffic;
- emergency traffic;
- pedestrians;
- buildings,
- varying building attenuations and U-NII internal locations; and
- both DSRC RSU devices and the various U-NII devices under test.

AASHTO notes that the Commission's proposed Phase III test plan describes some, but not all of these requirements. While intelligent cooperation between vehicular and personal on-board devices (OBU or OBE) and fixed roadside DSRC devices is planned, no such intelligence is assumed for U-NII devices, so as those become densely populated, the joint effect would only be to increase the probability of interference, rather than to permit a cooperative sensing protocol. Sensing has been extensively studied on the record, in the White Space proceeding[7] among others,

[7] ET Docket 04-186

and was rejected—and in that case the victim receivers (Television sets) were *fixed* and thus far easier to model and protect. DSRC receivers are both fixed (OBU-RSU) and mobile (V2V).

Upon information and belief, at the time of this writing Cisco has not released any technical details about actual hardware, much less actual devices available for testing its proposal. Neither has it addressed the issue of internal de-sense, i.e., while transmitting a WLAN stream on DSRC channel x, what would be the impact on sensitivity to receive simultaneous transmissions on DSRC channel y? Neither the control channel nor the Safety channel 172 can be assumed to indicate the presence of DSRC safety-related traffic alone. Until Cisco does so and it successfully proves harmless to all varieties of DSRC implementation with at least the testing criteria above with a thorough and open testing protocol, AASHTO remains concerned that no adequate simulation can be done which will preserve DSRC's role in crash prevention or the Connected Vehicle program. While a small number of proposed devices under physical test would permit initial determinations of performance, as proposed by the Commission's Phase 1 and Phase II testing protocols, using those results to simulate (rather than physically test over time) Phase III well enough to decide on revised Rules is not likely to be able to predetermine incremental losses of DSRC packets.

B. <u>Proposal 2, Re-channelize</u>

While time-based sharing in Proposal 1 is risky due to the difference in required transmission time for HALL DSRC (200 microseconds) and the Cisco-proposed U-NII (3000 microseconds), the spectrum-based sharing in this Proposal avoids that problem by assuming that some channels are not subject to the same requirements, and thus are not critical to safety. While it is true that the BSM can be accommodated in all but the most congested scenarios in no more than two 10 MHz DSRC channels, it is a fallacy to assume that other service channels will not carry safety-related messages, and there are many other identified protocols[8]. It is also questionable whether the mission of DSRC, including CV and Autonomous Vehicles, can survive being spectrally squeezed. AASHTO reminds the Commission that the 75 MHz allocated to DSRC was itself a minimally acceptable compromise, and notes that some commenters are already referring to the U-NII-3 upper band edge as 5855 MHz, thus absorbing the 5 MHz channel between 5850 and 5855 MHz reserved for a guard band and for future evolution of DSRC, which is *still evolving*. The recently adopted out-of-band emission (OOBE) mask will raise the DSRC noise floor, especially under channels 172, 174 and 176 which are closest to the U-NII-3 band edge at 5850 MHz. While such variables as the noise floor at any given time and place, the overall frequency of DSRC use, path losses and perturbation of both U-NII and DSRC radio channels may be debated, it is clear that a 3 dB rise in the DSRC noise floor will require up to four times the initial and ongoing costs for its infrastructure, and those costs are independent of any single DSRC channel. Further increases to the noise floor caused by in-band transmissions of unlicensed devices will necessarily increase cost, delay implementation and the critical mass of "market penetration" of DSRC infrastructure in the Public Notice.

III. <u>CONCLUSIONS</u>

AASHTO wishes to thank the Commission for its efforts to date to analyze sharing in the DSRC band, and reiterates its previous comments that within a rigorous and open testing protocol and specific U-NII device operations be proven harmless before taking any action to revise the U-NII Rules, as such action cannot easily be undone. AASHTO is open to sharing so long as the essential DSRC mission, amplified as it now is by CV and Autonomous Vehicular benefits, is not

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[8] See http://www.its.dot.gov/pilots/cv_pilot_apps.htm

compromised. In its original comments, it established that a five-to-eight mile interference zone will be created for co-channel sharing by a U-NII Band 4 device: it is unclear how that can be mitigated by Proposal 1. The newly adopted OOBE emission for U-NII Band 3 devices, if extended to any or all of channels 172, 174 and 176 as advocated by Proposal 2, could create unacceptable areas of interference on those channels while also elevating the noise floor for the remaining channels, which would then be required to carry all safety-related protocols, negating planning and investment in all installed systems.

AASHTO stands ready to work with the FCC, the National Telecommunications and Information Administration, the United States Department of Transportation (DOT), State DOTs, ITS America, the Institute of Transportation Engineers (ITE), the ASTM, the IEEE 802.11 working groups, the SAE, the Intelligent Transportation Systems industry, the public safety and private transportation user communities, DSRC equipment manufacturers, and the U-NII broadband equipment manufacturers to explore, simulate, and test ideas for sharing the DSRC spectrum.

WHEREFORE, the premises considered, it is respectfully requested that the Commission act in accordance with the views expressed herein.

Respectfully submitted,

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